



UNITED STATES PATENT AND TRADEMARK OFFICE

Sw
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,646	10/17/2003	Hiroshi Mizusawa	243373US3	9818
22850	7590	02/18/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CHEN, SOPHIA S	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,646

Applicant(s)

MIZUSAWA, HIROSHI

Examiner

Sophia S. Chen

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/13/04 & 6/4/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "image bearing body contacting the brush member, brush member configured to clean the image bearing body" (claim s 11 and 22), "the transfer device contacting the brush member, the brush member configured to clean the transfer device" (claims 12 and 24), "the member comprises means for bearing an image" (claim 28), and "the member comprises means for transferring an image from an image bearing body to a recording medium" (claim 30) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8, 10, 13-18, 20, 23, 26, 27, 29, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Amemiya et al. (US Pat. Pub. No. US 2002/0106212 A1)

Amemiya et al. discloses an image forming apparatus comprising an image bearing body 1 and a cleaning apparatus/method, the cleaning apparatus/method comprising: a brush member (roller) 12 configured to contact and to remove toner particles from a member (a charge roller) 2, the brush member 12 comprising a conductive material (paragraph [0024]); the brush member 12 is configured to be held by its own weight in contact with the member 2 and is configured to be driven by rotation of the member 2 (paragraph [0025]); the brush member 12 having a plurality of bristles, and a length of the bristles is not greater than 2 mm (paragraph [0031] and Figure 2); the bristles 20 having a thickness of not greater than 5 deniers, and wherein a

Art Unit: 2852

density of the bristles 20 is at least 15000 bristles/cm² (paragraph [0033]); inherently, the brush member 12 comprises a material configured to have an opposite charge to the toner particles because of the electrostatic (rubbing) effect (paragraph [0036]); a charging device 2 configured to charge the image bearing body 1 (paragraph [0017]); and a removable process cartridge 14 comprising the cleaning apparatus 18 (paragraph [0021] and Figure 1).

4. Claims 1, 6-8, 10, 13, 18-20, 23, 26, 27, 29, and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura et al. (JP 07-140763, cited in Form PTO-1449).

Kimura et al. discloses an image forming apparatus comprising an image bearing body 1 and a cleaning apparatus/method, the cleaning apparatus/method comprising: a brush member (roller) 3 configured to contact and to remove toner particles from a member (a charge roller) 2, the brush member 3 comprising a conductive material (paragraph [0020]); inherently, the brush member 3 comprises a material configured to have an opposite charge to the toner particles because of the electrostatic (rubbing) effect (paragraph [0023]); a resistance value of the brush member 3 is between 1×10^3 and $1 \times 10^8 \Omega$ (paragraph [0020]); a removable process cartridge comprising the cleaning apparatus (Figure 1); the member (charge roller) 2 comprising means for charging the image bearing body 1 (paragraph [0002]); and the brush member 3 comprising a plurality of bristles 9 (Figure 2).

5. Claims 1, 6, 8, 11, 12, 13, 18, 20, 22, 24, 27, 28, and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Tombs (US Pat. No. 5,722,015).

The patent discloses an image forming apparatus comprising an image bearing body 2, a charging device 4, a (intermediate) transfer device 3, and a cleaning apparatus/method, the cleaning apparatus/method comprising: a brush member (roller) 20 or 27 configured to contact and to remove toner particles from a member (the image bearing body) 2 or (intermediate transfer device) 3 (column 2, lines 50-57 and Figure 1), the brush member 20 or 27 comprising a conductive material (column 3, lines 17-21); the brush member 20 or 27 comprises a material configured to have an opposite charge to the toner particles (column 3, lines 17-21); the brush member 20 configured to clean the image bearing body 2 (column 2, lines 50-57 and Figure 1); the transfer device 3 adapted to transfer an image to a recording sheet (column 2, lines 40-44), and the brush member 27 configured to clean the transfer device 3 (column 2, lines 50-57 and Figure 1); means for removing toner particles attached to the member 2 or 3 by electrostatic (triboelectric attraction) charge (column 3, lines 45-49); and the brush member 20 or 27 comprising a plurality of bristles (Figures 1 and 2).

6. Claims 1, 7-9, 12, 13, 19, 20, 21, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroshima et al. (EP 0 738 938 A1, cited in Form PTO-1449)

Hiroshima et al. discloses an image forming apparatus comprising an image bearing body 1, a charging device 2, a (intermediate) transfer device 5, and a cleaning apparatus/method, the cleaning apparatus/method comprising: a brush member (roller) 13 configured to contact and to remove toner particles from a member (intermediate transfer device) 5 (column 23, line 57 to column 24, line 12 and Figure 11), the brush member 13 comprising a conductive material (column 24, lines 11-12); a resistance

Art Unit: 2852

value of the brush member 13 is between 1×10^3 and $1 \times 10^8 \Omega$ (1×10^3 ; column 24, lines 17-18); the conductive material comprises carbon (column 24, lines 14-16); the transfer device 5 adapted to transfer an image to a recording sheet P (Figure 1), and the brush member 13 configured to clean the transfer device 5 (column 23, line 57 to column 24, line 12); and the brush member 13 is configured to remove toner particles prepared by a polymerization method (column 16, lines 11-15).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11, 12, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amemiya et al.

Amemiya et al., as discussed above, further discloses a brush member 10 configured to clean the image bearing body 1 (paragraph [0020]).

Amemiya et al. differs from the instant claimed invention in not disclosing the details of the brush member 10.

However, Amemiya et al. discloses the brush member 12 comprising a conductive material for removing toner particles attached to the member 2 by electrostatic charge (paragraphs [0024] and [0036]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the brush member 12 as taught by Amemiya et al. in place of the brush member 10 of Amemiya et al. because of the same functionality for removing toner particles.

Other Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Karal (US Pat. No. 4,361,922) discloses a cleaning brush for image forming apparatus is provided with two or more types of bristles, one of which is made from conductive material.

Fujita et al. (US Pat. No. 5,233,394) discloses an image forming apparatus comprising a conductive cleaning brush for cleaning a transfer device.

Asano et al. (US Pat. No. 5,371,578) discloses a charging/cleaning brush for removing toner particles from an image bearing body.

Fujita et al. (US Pat. No. 6,070,043) discloses an image forming apparatus comprising a transfer device, a cleaning brush, and a resistance value of the brush is between 10^3 and $10^4 \Omega$.

Yoshino et al. (US Pat. No. 6,175,711 B1) discloses an image forming apparatus comprising a transfer device, a cleaning brush, and a resistance value of the brush is between 10^2 and $10^4 \Omega \cdot \text{cm}$.

Hirano (US Pat. No. 6,311,031 B1) discloses an image forming apparatus comprising a transfer device, a cleaning brush, and a resistance value of the brush is between 10^7 and $10^9 \Omega$.

Takahashi et al. (US Pat. No. 6,430,379 B1) discloses an image forming apparatus comprising a conductive cleaning brush for cleaning a transfer device.

Amemiya et al. (US Pat. Pub. No. US 2003/0044196 A1) discloses an image forming apparatus comprising an image bearing body, a charging device, a conductive brush roller for cleaning the charging device, and a brush roller for cleaning the image bearing body.

Amemiya et al. (EP 1 229 399 A1) discloses an image forming apparatus comprising a brush roller having a brush contacting a charge roller due to the weight of the brush roller.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (571) 272-2133. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
February 16, 2005